

ABSTRACT OF THE DISCLOSURE

The present invention relates to an electrode assembly useful for analyzing metal electroplating solutions. Such electrode assembly comprises a measuring electrode, preferably a rotating disc electrode or a microelectrode, and at least one of an *in situ* cleaning mechanism, a nucleation and metal growth optimization mechanism, and a voltage limiting mechanism. The present invention also relates to usage of such electrode assembly for *in situ* cleaning of the measuring electrode, nucleation and metal growth optimization, or voltage limitation.